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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,262	07/18/2006	Hirosaki Nakamura	293318US0PCT	2824
22850	7590	10/06/2008		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
GARRETT, DAWN L				
ART UNIT		PAPER NUMBER		
1794				
NOTIFICATION DATE		DELIVERY MODE		
10/06/2008		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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# Office Action Summary

## Application No.

10/586,262

## Applicant(s)

NAKAMURA ET AL.

## Examiner

Dawn L. Garrett

## Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date 7/18/06
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. This application is a 371 of PCT/JP05/00522 filed 1/18/2005. The preliminary amendment to the specification, abstract and claims has been entered. Claims 4, 5, and 7 were amended. Claims 1-8 are pending.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 5 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Independent claim 1 excludes Ar as phenyl, 4-biphenyl, 4-terphenyl, or 4-quaterphenyl, but claims 5 and 6, which depend from claim 1, allow for Ar to be polyphenyl having 2 to 5 phenyl groups. It appears groups excluded in the parent claim are included in the dependent claims, which renders the meets and bounds of the claims unclear. Clarification and/or correction are required.

***Claim Rejections - 35 USC § 102***

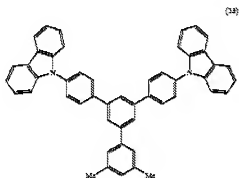
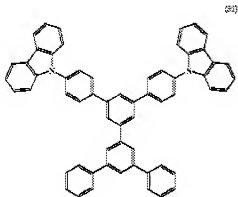
4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Hosokawa (US 2002/0045061 A1). Hosokawa exemplifies the following compound as a carbazole

derivative for a light emitting layer of an organic electroluminescent device (see abstract and par. 79 and page 9):



Above compounds 31 and 33 read upon instant formula I wherein R<sub>2</sub> is formula II and Ar includes a substituted phenyl group (claim 1 is interpreted such that substituted phenyl is not excluded) per claims 1 and 2. Formula 31 reads upon a polyphenyl group according to claim 5.

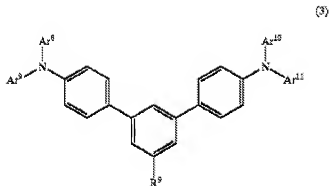
***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1794

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

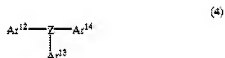
7. Claims 1- 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosokawa (US 2002/0045061 A1). Hosokawa teaches organic electroluminescence elements comprising carbazole derivatives in the luminescent layer (see abstract). The carbazole derivative may include the following formula (3) (see par. 26 and 29):



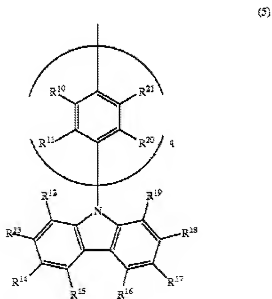
In the above formula,  $Ar^8$  and  $Ar^9$  as well as  $Ar^{10}$  and  $Ar^{11}$  may connect to form a carbazole group (see par. 29 and specific formula 3 compounds shown at par. 79, pages 8-10). These groups read upon instant formula I wherein  $R_2$  is instant formula II (which also reads upon instant claim 2). In the above formula (3),  $R_9$  may include a substituted or unsubstituted aryl group having 6 to 18 nucleus carbon atoms (see par. 29) per the instant claim 1 requirement for "Ar" to comprise an aryl group having 6 to 60 carbon atoms. With regard to claim 4, although not exemplified with  $Ar^8/Ar^9$  and  $Ar^{10}/Ar^{11}$  as carbazole groups, Hosokawa teaches the  $R_9$  group may include a naphthyl group (see compound 36 naphthyl group, page 10).

With regard to claims 5 and 6, Hosokawa does not exemplify a compound having 4 or 5 phenyl groups, but does teach R9 may be a substituted aryl group of 6 to 18 nucleus carbon atoms. It would have been obvious to one of ordinary skill in the art to have formed a compound having further phenyl substituent groups on R9, because one would expect such a compound to result in a well-functioning material for a light emitting layer of a device, since Hosokawa teaches the R9 aryl group may be further substituted.

With regard to claim 3, Hosokawa teaches the following formula (4):



(see par. 30) wherein Z may be an aromatic group and Ar12 to Ar14 may be an aryl group or phenyl carbazole group of formula (5):



Where Ar12 and Ar14 are carbazole groups according to formula (5), Z is phenyl, and Ar13 is an aryl substituent group reads upon the compound of claim 3.

Hosokawa discloses a phosphorescent dopant for the light emitting layer at par. 86-92 per instant claim 8.

Although Hosokawa exemplifies compounds 31 and 33 (as discussed in the anticipation rejection above), further compounds according to instant formula I are not *exemplified*, but are rendered *obvious* by Hosokawa's teaching for suitable substituent groups on formulas (3) and (4), respectively, as discussed in this rejection. It would have been obvious to one of ordinary skill in the art at the time of the invention to have formed compounds according to formulas (3) and (4) that read upon instant formula (I) of claims 2-6 and to have used these compounds in a light emitting layer of a device in combination with a phosphorescent dopant with an expectation of achieving a well-performing device, because Hosokawa clearly teaches compounds according to instant claims 1-6, as discussed in this rejection, as suitable for a light emitting layer of a device in order to achieve a good lifetime property and superior heat-resistance.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dawn L. Garrett whose telephone number is (571) 272-1523.

The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (571) 272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dawn Garrett/  
Primary Examiner  
Art Unit 1794

September 30, 2008